

IN THE CLAIMS

Please cancel claims 1-15 and insert new claims 16-35.

16. A valve assembly for a fuel injection system of an internal combustion engine, comprising,

an adjustably disposed valve element (32), comprising

a piezoelectric actuator unit (20) for adjusting the valve element (32),

a hydraulic force transmission chamber (28), disposed in the force transmission path between the actuator unit (20) and the valve element (32),

a hydraulic pressure distributor assembly (50, 52) for diverting at least one hydraulic filling stream, to be delivered to the force transmission chamber (20) for filling it, from a hydraulic mainstream,

the pressure distributor assembly (50, 52) having a conduit system (46, 48), embodied in a conduit housing (14)

a main conduit (46) leading to the hydraulic mainstream and at least one filling conduit (48), carrying the hydraulic filling stream and branching off from the main conduit (46);

the pressure distributor assembly (50, 52), viewed in the flow direction of the hydraulic mainstream, forming hydraulic throttling regions (50, 52), one on each side of the branching point of the filling conduit (48) from the main conduit (46), for the hydraulic mainstream; and,

at least one of the throttling regions (50, 52) being embodied as a throttle bore (50a, 52a; 50b, 52b; 52c).

17. The valve assembly of claim 16, wherein at least the throttling region (52) located downstream of the branching point is embodied as a throttle bore (52a; 52b; 52c).

18. The valve assembly of claim 17, wherein the throttling region (50) located upstream of the branching point is also embodied as a throttle bore (50a; 50b).

19. The valve assembly of claim 16, wherein at least one of the throttling regions (50, 52) is formed by a throttle bore (50a, 52a; 50b), which is embodied in a throttle body (54a, 56a; 54b) produced separately from and retained solidly on the conduit housing (14a; 14b).

Alt
Cont


20. The valve assembly of claim 17, wherein at least one of the throttling regions (50, 52) is formed by a throttle bore (50a, 52a; 50b), which is embodied in a throttle body (54a, 56a; 54b) produced separately from and retained solidly on the conduit housing (14a; 14b).

21. The valve assembly of claim 18, wherein at least one of the throttling regions (50, 52) is formed by a throttle bore (50a, 52a; 50b), which is embodied in a throttle body (54a, 56a; 54b) produced separately from and retained solidly on the conduit housing (14a; 14b).

22. The valve assembly of claim 19, wherein the throttle body (54a, 56a; 54b) is embodied as a flat throttle disk with a central throttle bore (50a, 52a; 50b).

23. The valve assembly of claim 19, wherein the throttle body (54a, 56a; 54b) is inserted into a larger-diameter portion of the main conduit (46a; 46b) and is braced on a transitional step (58a, 60a; 58b) to a smaller- diameter portion of the main conduit (46a; 46b).

24. The valve assembly of claim 22, wherein the throttle body (54a, 56a; 54b) is inserted into a larger-diameter portion of the main conduit (46a; 46b) and is braced on a transitional step (58a, 60a; 58b) to a smaller- diameter portion of the main conduit (46a; 46b).

 25. The valve assembly of claim 23, wherein the throttle body (54a, 56a; 54b) is fixed to the transitional step (58a, 60a; 58b) by means of a screw body (64a, 70a; 70b) screwed into the main conduit (46a; 46b), and the screw body (64a, 70a; 70b) forms an essentially unthrottled flow passage, preferably forming a central through bore (66a, 72a; 72b), for the hydraulic mainstream.

26. The valve assembly of claim 24, wherein the throttle body (54a, 56a; 54b) is fixed to the transitional step (58a, 60a; 58b) by means of a screw body (64a, 70a; 70b) screwed into the main conduit (46a; 46b), and the screw body (64a, 70a; 70b) forms an essentially unthrottled flow passage, preferably forming a central through bore (66a, 72a; 72b), for the hydraulic mainstream.

27. The valve assembly of claim 25, wherein the throttle body (54a; 54b) forms the throttling region located upstream of the branching point, and wherein a filtering

element (74a; 74b) for filtering the hydraulic mainstream is retained in the main conduit (46a; 46b) between the screw body (70a; 70b) and the throttle body (54a; 54b).

28. The valve assembly of claim 26, wherein the throttle body (54a; 54b) forms the throttling region located upstream of the branching point, and wherein a filtering element (74a; 74b) for filtering the hydraulic mainstream is retained in the main conduit (46a; 46b) between the screw body (70a; 70b) and the throttle body (54a; 54b).

29. The valve assembly of claim 27, wherein the filtering element (74a; 74b) is impermeable to the hydraulic fluid, and a filter gap, in particular an annular filter gap, is defined between the outer circumferential jacket of the filtering element (74a; 74b) and the conduit wall of the main conduit (46a; 46b).

30. The valve assembly of claim 16, wherein one (52) of the throttling regions (50, 52), in particular the throttling region (52) located downstream of the branching point, is formed by a throttle bore (52b; 52c) machined into the material comprising the conduit housing (14b; 14c).

31. The valve assembly of claim 30, wherein the throttle bore (52b; 52c) is disposed near the outside of a housing body of the conduit housing (14b; 14c).

32. The valve assembly of claim 25, wherein the throttle bore (52b; 52c) is produced by laser drilling.

33. The valve assembly of claim 16, wherein one (52) of the throttling regions (50, 52), in particular the throttling region (52) located downstream of the branching point, is formed by a throttle bore (52c), and that for forming the other throttling region (50), in particular the throttling region (50) located upstream of the branching point, a throttle pin (80c) is inserted into the main conduit (46c), which between its pin jacket and the conduit wall of the main conduit (46c) defines a throttle gap.

A17
cont

34. The valve assembly of claim 33, wherein the branching point is disposed inside the conduit housing (14c), and in the region of the branching point the main conduit (46c) has a cross-sectional enlargement (86c), the cross-sectional enlargement (86c) preferably being produced by electrochemical erosion.

35. The valve assembly of claim 16, wherein the main conduit (46) branches off from a fuel supply line (16) that serves to deliver fuel to an injection nozzle of the engine.
